

Future Travel Demand and Corridor Performance

5.1 Introduction

This chapter looks at the future traffic conditions in the US 95 corridor assuming no capacity improvements are made to US 95. The intent of this analysis was to develop a baseline against which future transportation improvement options could be assessed.

To better estimate future traffic conditions within the US 95 corridor and the larger study area, the study included a rigorous reexamination and recalibration of the Kootenai County Transportation Planning Model. New demographic summaries and forecasts, refined street simulation networks, and new external trip origin-destination patterns were all incorporated into the model data set to more accurately replicate current traffic conditions and better predict future, 20-year forecasts. With these future travel condition estimates, a set of travel performance measures were defined and summarized to compare current and future travel conditions, and then test the traffic impacts of various transportation improvement options. This chapter summarizes the process and findings of the future travel demand estimation and measures of corridor performance for US 95 and the study area.

5.2 Kootenai County Transportation Planning Model

As part of the US 95 Coeur d'Alene Corridor Plan process, the Kootenai County Transportation Planning Model was refined and updated. In a separate report summarized in **Appendix D**, *Kootenai County Transportation Planning Model – February 2001*, prepared by the Tmodel Corporation, a detailed, systematic summary of the specific model refinements is provided. Those refinements generally include the following:

- Refined base year and planning horizon year demographics forecasts, including updated growth allocations;
- Refined base year and planning horizon year roadway network for better calibration and future traffic assignment accuracies; and
- Developed new cordon or external trip origin-destination patterns.

Future Land Use

Land development within Kootenai County is expected to grow considerably during the next 20 years. The US 95 Corridor study included an extensive reexamination of regional demographic growth forecasts to better determine future traffic conditions. The demographic analysis included refined forecasts and geographic allocation of growth consistent with the City and County comprehensive plans and statewide demographic forecasts for the Idaho Panhandle region. **Table 5-1** summarizes the base year (2000) and planning horizon (2020) demographic forecasts for Kootenai County. In general, housing (about 80 percent) is expected to outpace non-residential growth in Kootenai County during the next 20 years. Retail and office employment is expected to grow by about 58 to 66 percent, while industrial employment is expected to grow by 44 percent.

Table 5-1
Kootenai County Demographics

Land Use Category	2000	2020	% Increase
Single Family Residential (dwellings)	27,610	49,525	79%
Multi-Family Residential (dwellings)	4,610	8,365	81%
Retail (employees)	15,645	24,735	58%
Office (employees)	29,970	49,160	66%
Industrial (employees)	10,150	14,585	44%
School (students)	19,010	31,410	65%

Figures 5-1 and 5-2, respectively, illustrate the 2000 and 2020 residential (dwelling units) and retail employment in the study area. **Figure 5-3** illustrates the 2000 and 2020 total employment within the study area. As shown, the region's demographic growth is generally centered along the US 95 corridor.

Growth in Study Area Traffic – Current vs. Future Travel Demand

The Kootenai County Transportation Planning Model was re-calibrated for PM peak hour (typical of the 4:30 to 5:30 p.m. time period) traffic conditions in 2000. Future PM peak hour traffic conditions are estimated with the model for 2020, the 20-year planning horizon for the study. **Figure 5-4** illustrates a side-by-side comparison of 2000 and 2020 PM peak hour traffic conditions for the study area. In general, there is significant traffic growth in the Coeur d'Alene/Hayden area, most notably on I-90, US 95, Government Way, Ramsey Road, and a number of major east-west arterials.

Table 5-2 summarizes the comparison of 2000 and 2020 traffic volume forecasts on US 95 at various locations within the study area. In general, traffic growth on US 95 ranges from 10 to 40 percent. With respect to the region's demographic growth, the rate of growth in PM peak hour traffic on US 95 is considerably lower. This is due, primarily, to the levels of congestion already experienced on US 95 during the PM peak hour. Two individual or simultaneous conditions are likely to be seen: (1) traffic generated by growth in the region will use other routes (like Government Way and Ramsey Road) than US 95 because US 95 is already at capacity; and/or (2) traffic generated by growth will expand and extend the congested peak hour travel periods (e.g., today's traffic congestion from 4:30 to 5:30 p.m. may be experienced from 4 to 6 p.m. or longer).

Table 5-2
US 95 PM Peak Hour Traffic Volumes (two-way)*

Location	2000	2020	% Increase
Spokane River Bridge	1,320	1,710	30%
Between Walnut and Ironwood	1,480	1,630	10%
Between Appleway and Neider	2,590	3,310	33%
Between Prairie and Wyoming	2,860	3,430	20%
Between SH-53 and Ohio Match	1,250	1,730	39%

* Assumes no capacity improvements to US 95.

Study Area Households

Figure S-1



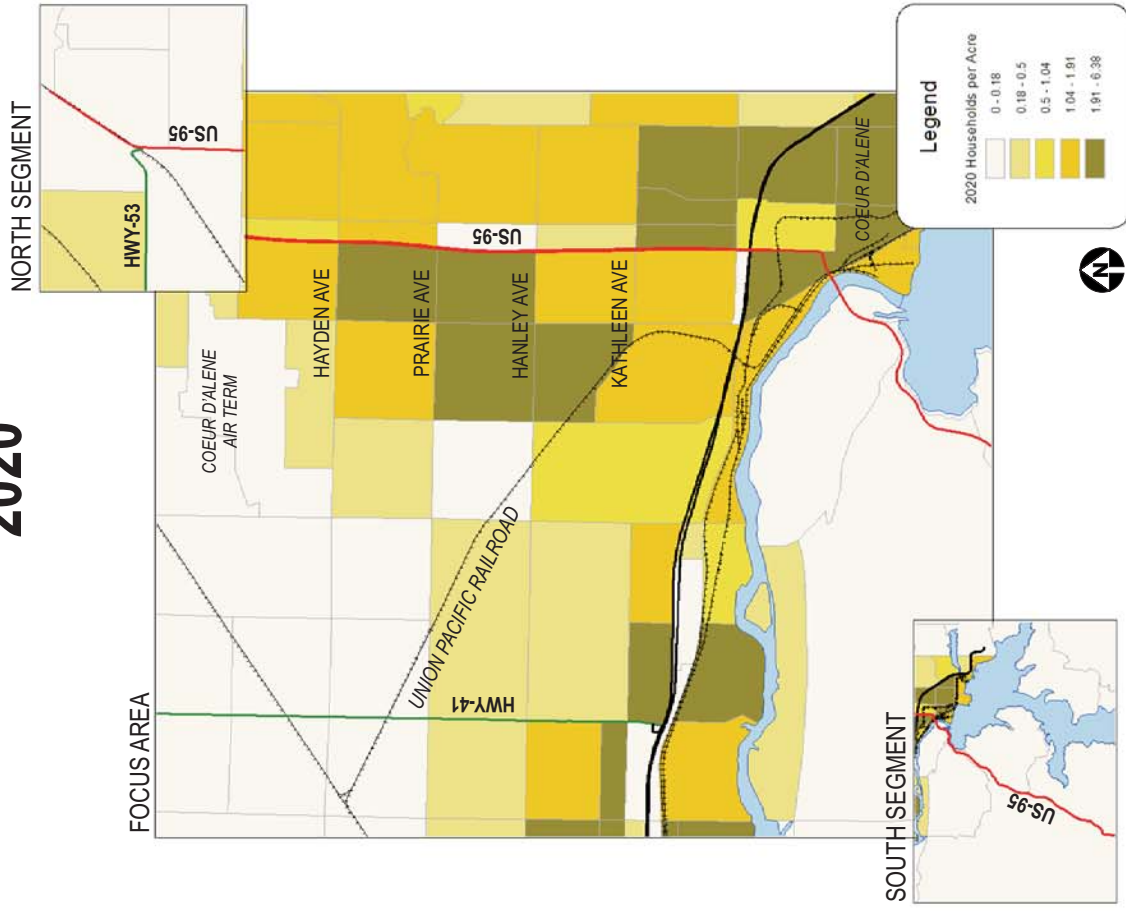
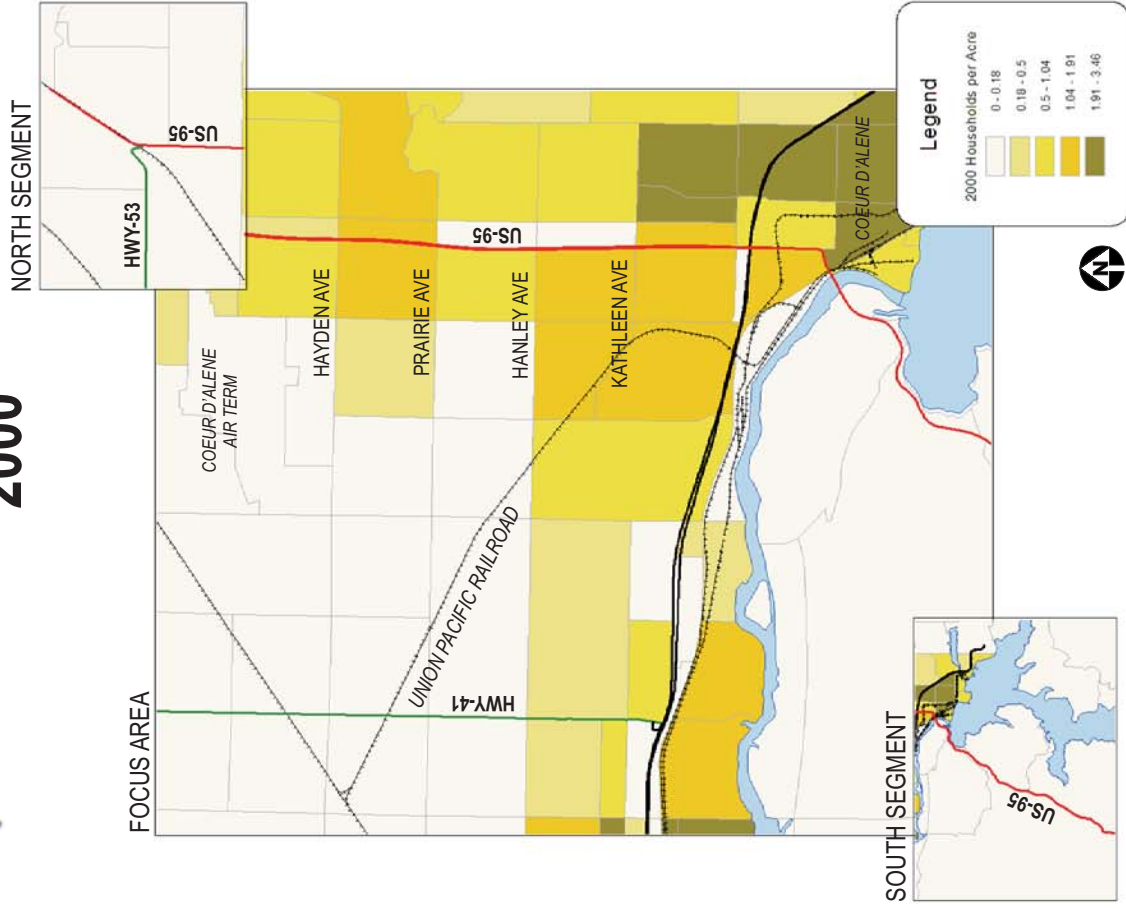
DISTRICT 1

Idaho Transportation Department



2000

2020



Study Area Retail Employment

Figure S-2

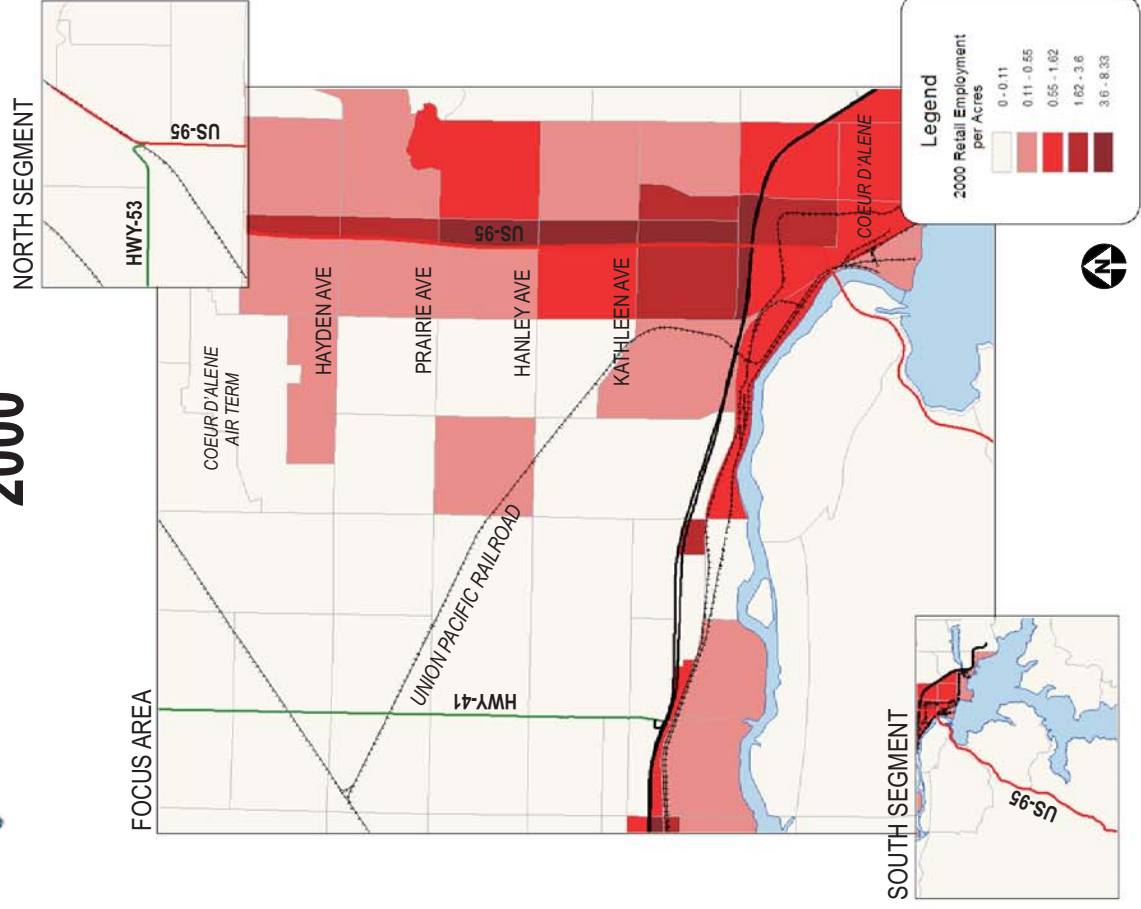


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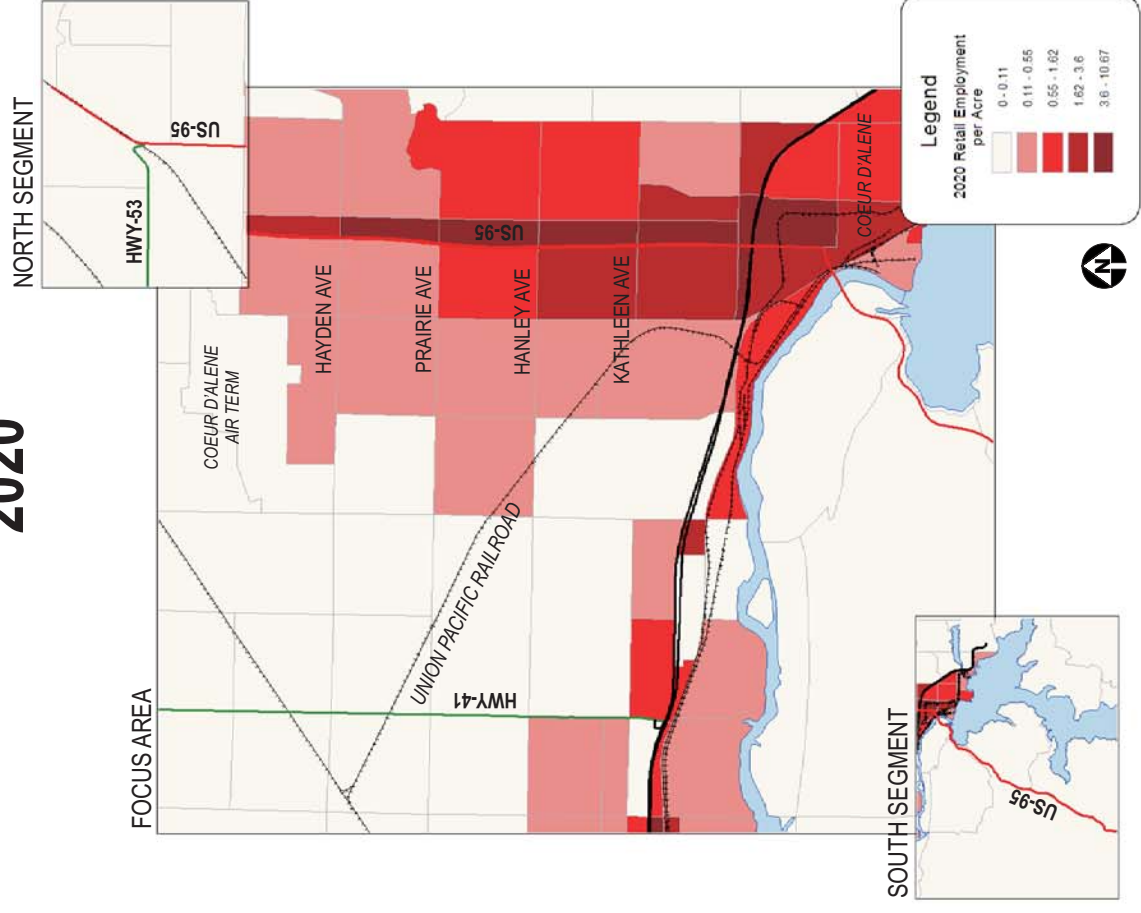
Idaho Transportation Department



2000



2020



Study Area Total Employment

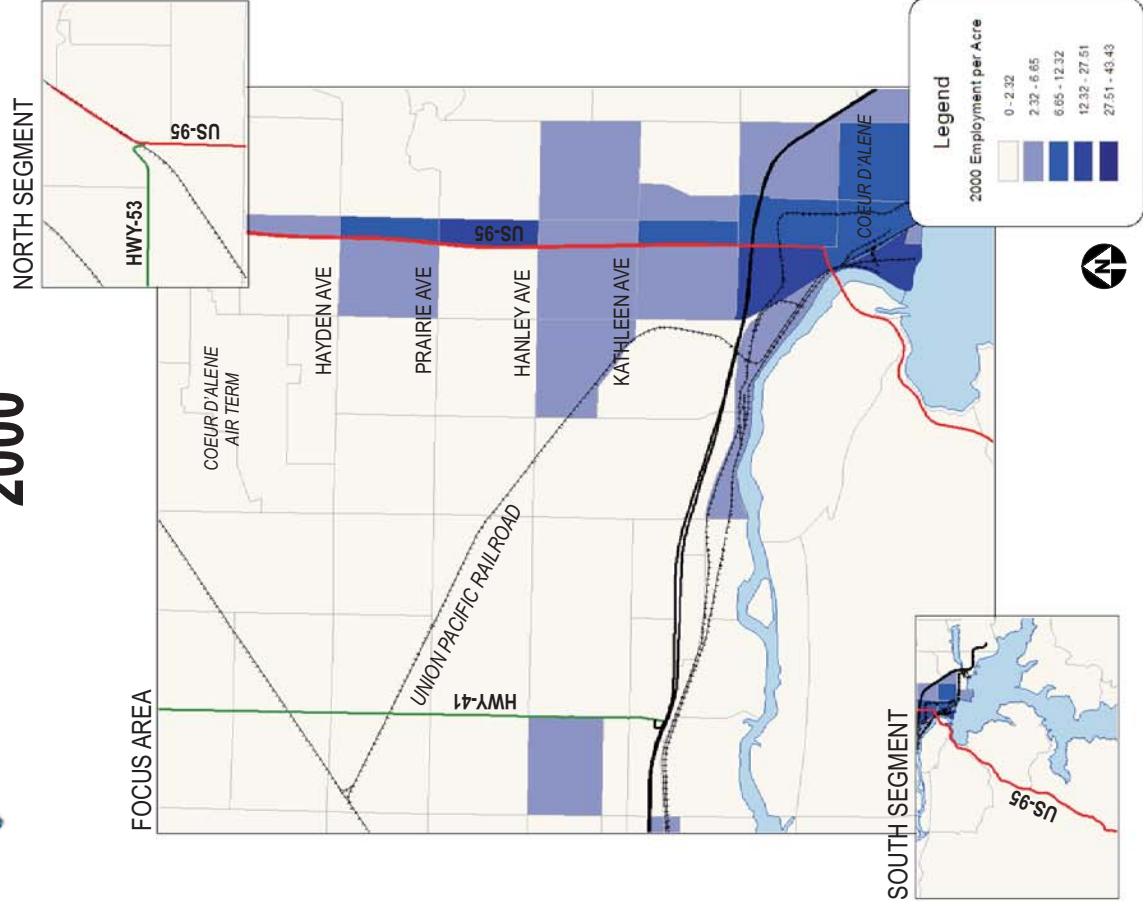
Figure S-3



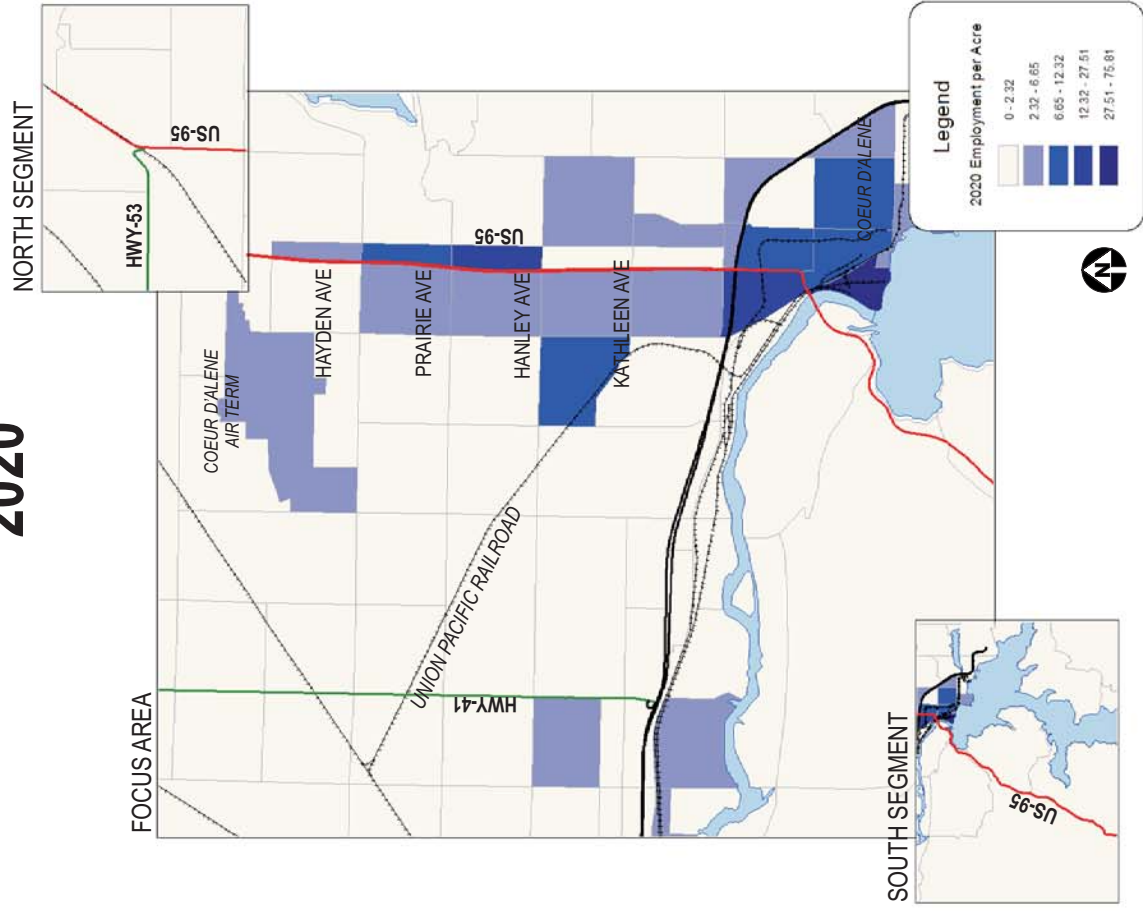
DISTRICT 1

Idaho Transportation Department

2000



2020



Kootenai County Travel Model Calibration and Forecast

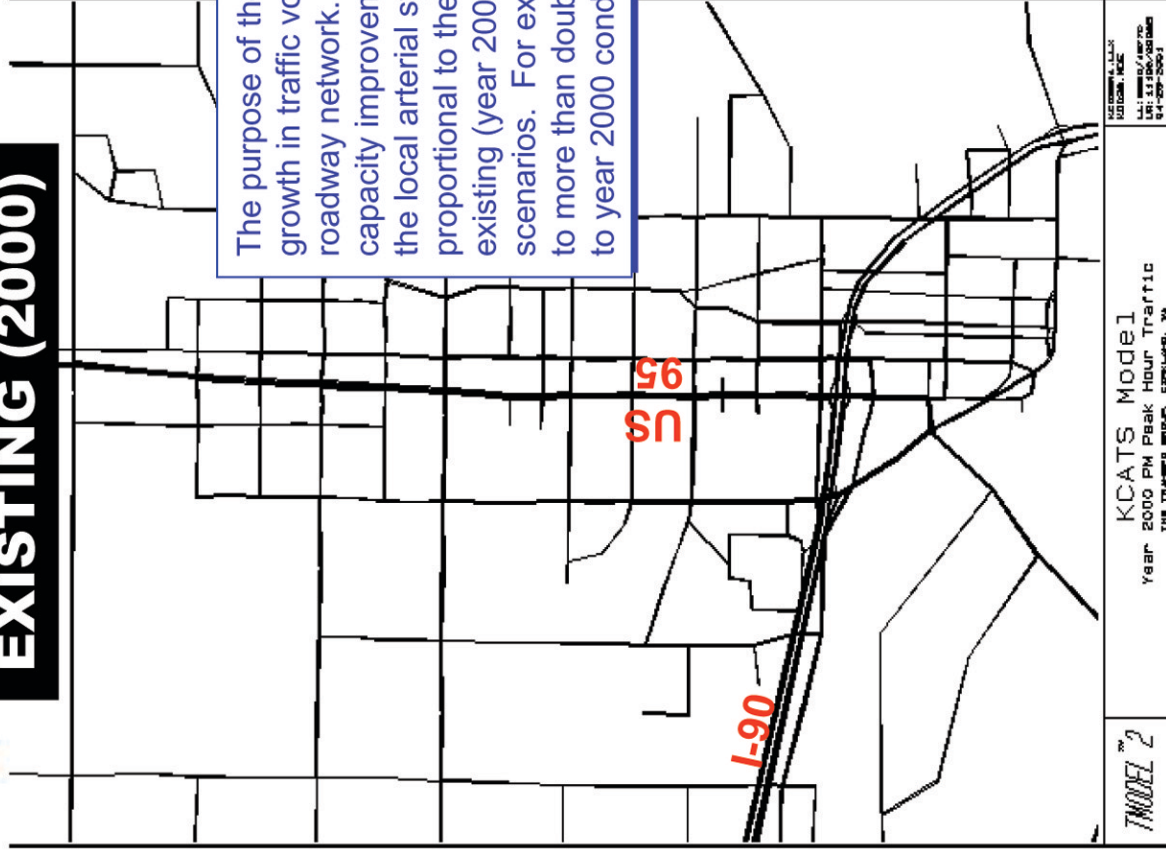
Figure 5-4



Idaho Transportation Department

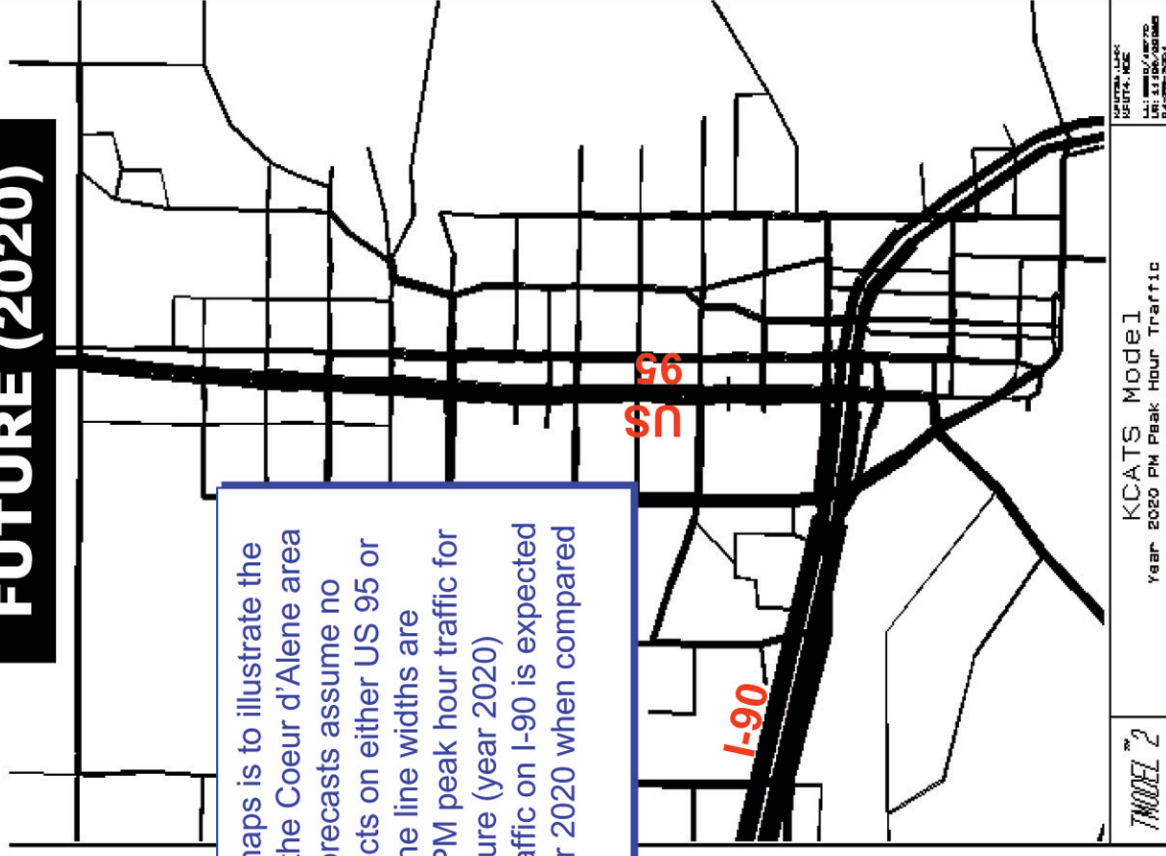


EXISTING (2000)



The purpose of these two maps is to illustrate the growth in traffic volume on the Coeur d'Alene area roadway network. These forecasts assume no capacity improvement projects on either US 95 or the local arterial system. The line widths are proportional to the level of PM peak hour traffic for existing (year 2000) and future (year 2020) scenarios. For example, traffic on I-90 is expected to more than double by year 2020 when compared to year 2000 conditions.

FUTURE (2020)



These expected conditions are further substantiated in review of the travel model characteristics, comparing base year 2000 and future year 2020 PM peak hour conditions. **Figure 5-5** illustrates a comparison of existing and future, system-wide traffic conditions on the collector, arterial, and state highway network within the Coeur d'Alene/Hayden area, assuming no capacity improvements to US 95. A series of summary statistics indicating the various travel characteristics on the Kootenai County roadway network in general, and on US 95 (from Spokane River to Ohio Match Road) are listed in **Table 5-3**. These characteristics are listed and defined as:

- *Vehicle miles of travel (VMT)*. Total vehicle miles traveled on the street system (roadway system length x number of vehicles);
- *Vehicle hours of travel (VHT)*. Total travel time on the street system (roadway travel time x number of vehicles); and
- *Vehicle hours of delay (VHD)*. Total travel delay on the street system ((uncongested travel time – congested travel time) times number of vehicles).

As shown, the urban area travel conditions will worsen by 2020 as a result of growth in Kootenai County. The growth in vehicle miles traveled throughout the Kootenai County urban area (62 percent) is consistent in the demographic growth rates. ***Without any significant transportation capacity improvements, especially within the US 95 corridor, a ten-fold increase in area-wide travel delay is expected.***

Table 5-3
Travel Characteristics – PM Peak Hour

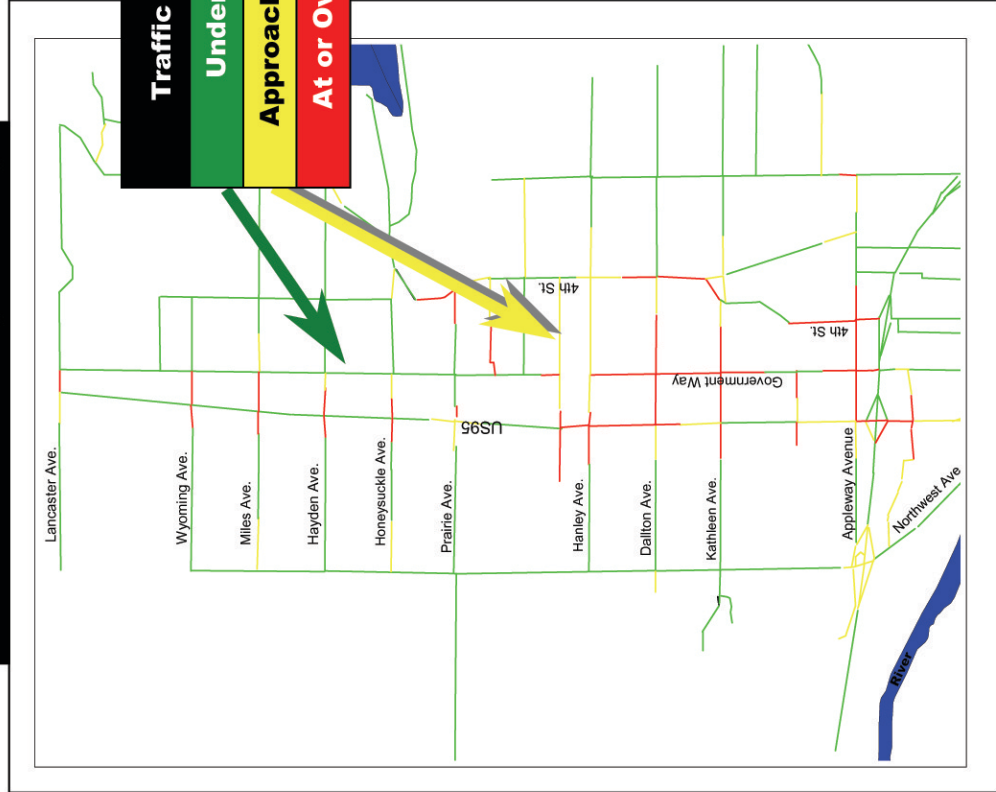
Location	2000	2020	% Change
Entire Urban Area			
Vehicle Miles of Travel	142,484	230,285	+ 62%
Vehicle Hours of Travel	4,115	15,180	+ 268%
Vehicle Hours of Delay	930	10,015	+ 975%
US 95: Spokane River to Ohio Match Road (12½ miles)			
Vehicle Miles of Travel	24,625	30,725	+ 25%
Vehicle Hours of Travel	785	1,395	+ 78%
Vehicle Hours of Delay	255	740	+ 190%
Average Delay (min)	8	18	+ 125%
Average Travel Time (min)	24	34	+ 42%
Average Travel Speed (mph)	31	22	- 41%

Other characteristics were calculated for the US 95 highway segments to summarize future travel conditions, including average travel speed, average travel time and average delay. VMT grows by only 25 percent on US 95, considerably lower than the County average of 62 percent, another indicator that US 95 is already at or near capacity. Countywide VHT and VHD grow at a considerable higher rate than VMT, indicating that many of the local streets are also expected to exceed their capacity by 2020. Model statistics show that during the current PM peak hour, it takes approximately 24 minutes to travel on US 95 from the Spokane River to Ohio Match Road. The average travel speed on US 95 in this section is about 31 mph. By 2020, this trip will take about 34 minutes (42-percent increase) at an average speed of 22 mph.



PM Peak Hour Traffic Conditions Figure 5-5

EXISTING (2000)



FUTURE (2020)

